



1998 Toxics Release Inventory

MICHIGAN

Reported Releases and Waste Management Activities (in pounds)

	Original Industries	New Industries	Total
On-site Releases	47,070,331	52,097,849	99,168,180
Air Emissions	40,997,059	34,096,574	75,093,633
Surface Water Discharges	483,956	201,693	685,649
Underground Injection Class I Wells	3,431,059	0	3,431,059
Underground Injection Class II-V Wells	0	0	0
On-site Land Releases to RCRA Subtitle C Landfills	86,194	8,258,900	8,345,094
Other On-site Land Releases	2,072,063	9,540,682	11,612,745
Off-site Releases (Transfers Off-site to Disposal)*	36,042,210	5,733,627	41,775,837
Total On- and Off-site Releases	83,112,541	57,831,476	140,944,017
Recycled On-site	335,609,755	35,404,698	371,014,453
Recycled Off-site	113,906,959	786,852	114,693,811
Energy Recovery On-site	179,352,021	0	179,352,021
Energy Recovery Off-site	62,742,845	130,246,849	192,989,694
Treated On-site	92,220,412	12,491,755	104,712,167
Treated Off-site**	41,034,588	43,980,512	85,015,100
Quantity Released On- and Off-site***	83,342,074	57,001,140	140,343,214
Total Production-related Waste Managed	908,208,654	279,911,806	1,188,120,460
Total Non-production-related Waste Managed	412,668	369	413,037

Transfers Off-site for Further Waste Management/Disposal

Recycling	113,717,904	744,803	114,462,707
Energy Recovery	64,830,135	134,377,493	199,207,628
Treatment	24,144,366	44,110,210	68,254,576
Publicly Owned Treatment Works (POTWs)	17,407,924	511,317	17,919,241
Metals and Metal Compounds*	132,499	468,195	600,694
Non-metal TRI Chemicals**	17,275,425	43,122	17,318,547
Other Off-site Transfers****	24,838	0	24,838
Off-site Transfers to Disposal (not including metals to POTWs)	36,446,152	5,424,740	41,870,892
Total Transfers Off-site for Further Waste Management/Disposal	256,571,319	185,168,563	441,739,882

* Transfers to POTWs of metals and metal compounds are included in off-site releases. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.

** Transfers to POTWs of non-metals are included in treated off-site waste management activity.

*** Excludes non-production-related releases; e.g. releases due to catastrophic events or remedial actions.

**** Transfers reported without a valid waste management code.

For More Information . . .

State Contact:

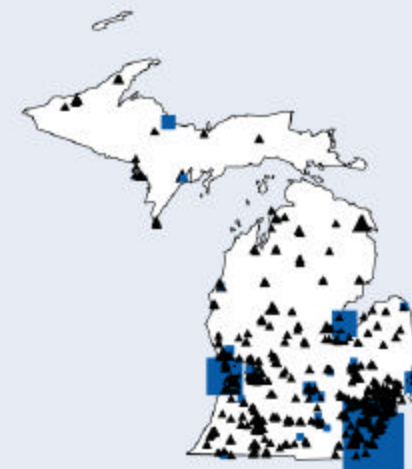
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To obtain TRI data use assistance, call TRI User Support Service (TRI-US):

(202) 260-1531
Fax: (202) 401-2347



■ New industry
▲ Original industry

The largest marker in the state map represents the largest facility for on-site releases in the state of Michigan. All markers are proportionally-sized to represent the on-site releases at each facility within this state.

State/TRI Data

Population	9,817,242
Square Miles	56,809
Total Facilities	956
Total Forms	3,786
Form As	432

	Original Industries	New Industries	Total
National Rank for Total On- and Off-site Releases*			
Rank	10	18	14
Pounds	83,112,541	57,831,476	140,944,017
National Rank for Total On-site Releases**			
Rank	18	19	20
Pounds	47,070,331	52,097,849	99,168,180
National Rank for Total Releases within State***			
Rank	8	18	12
Pounds	94,165,876	57,868,372	152,034,248
National Rank for Production-related Waste Managed			
Rank	7	6	7
Pounds	908,208,654	279,911,806	1,188,120,460

* Includes transfers out-of-state for disposal. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.

** Includes amounts released at the facility. Excludes amounts transferred to other sites.

*** Excludes transfers for disposal sent out-of-state or sent to other TRI facilities within the state reporting that amount released on-site.



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On-site and Off-site Releases for Top Ten Chemicals Ranked on Total Releases in the State (Original Industries)

CAS Number	Chemical	On-site Releases				Off-site Releases	Total Releases in the State**	Off-site Transfers to Disposal		
		Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	On-site Releases to Land Pounds	Transfers Off-site to Disposal* Pounds		Transferred Into State Pounds	Transferred Within State Pounds	Transferred Out of State Pounds
—	Zinc compounds	338,245	8,428	9,500	83,709	25,370,698	25,810,580	6,560,679	25,072,260	390,378
1330-20-7	Xylene (mixed isomers)	7,664,450	30	0	24	23,937	7,688,441	9,937	13,250	12,307
67-56-1	Methanol	4,344,048	126,052	2,900,000	4,622	1,724	7,376,446	1,665	2,469	255
108-88-3	Toluene	5,669,062	222	10,190	25	50,356	5,729,855	2,728	38,539	12,517
7647-01-0	Hydrochloric acid	3,046,232	0	5	0	264	3,046,501	0	255	9
7439-96-5	Manganese	70,881	142	0	440,260	2,201,738	2,713,021	176,392	2,178,033	54,705
—	Manganese compounds	26,881	22,227	0	290,900	2,303,742	2,643,750	982,898	2,272,900	30,842
7664-41-7	Ammonia	1,929,696	155,938	29,899	2,814	33,749	2,152,096	6,448	33,749	0
100-42-5	Styrene	2,054,591	250	0	550	15,134	2,070,525	17,486	13,720	1,414
—	Glycol ethers	2,003,810	548	0	12,000	50,106	2,066,464	18,505	27,797	22,309

* Excludes amounts transferred to other TRI facilities in the state reporting that amount released on-site.

** The chemical ranking is based on the amounts in this column.

On-site and Off-site Releases for Top Ten Chemicals Ranked on Total Releases in the State (Seven New Industries)

CAS Number	Chemical	On-site Releases				Off-site Releases	Total Releases in the State**	Off-site Transfers to Disposal		
		Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	On-site Releases to Land Pounds	Transfers Off-site to Disposal* Pounds		Transferred Into State Pounds	Transferred Within State Pounds	Transferred Out of State Pounds
7647-01-0	Hydrochloric acid	24,824,789	0	0	0	0	24,824,789	255	0	0
—	Barium compounds	110,340	87,881	0	9,814,374	2,103,423	12,116,018	2,001	1,960,333	143,253
7664-93-9	Sulfuric acid	3,332,551	0	0	0	0	3,332,551	0	0	0
7440-66-6	Zinc (fume or dust)	2,570,574	1	0	4	1	2,570,580	500	1	0
7664-39-3	Hydrogen fluoride	2,463,695	0	0	0	0	2,463,695	250	0	0
—	Lead compounds	2,795	7,533	0	1,074,123	800,511	1,884,962	38,565	651,183	149,336
—	Nickel compounds	22,242	9,790	0	1,191,442	289,642	1,513,116	113,218	287,532	2,113
—	Zinc compounds	168,865	10,518	0	1,142,298	168,448	1,490,129	169,382	167,539	921
—	Arsenic compounds	594	1,410	0	879,022	254,136	1,135,162	467	143,008	111,133
—	Selenium compounds	9,501	1,060	0	885,870	224,419	1,120,850	0	155,306	69,118

* Excludes amounts transferred to other TRI facilities in the state reporting that amount released on-site.

** The chemical ranking is based on the amounts in this column.



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On- and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (Original Industries)

Facility, City, County	On-site Releases						Total On-site Releases* Pounds	Off-site Releases (Transfers Off-site to Disposal)	
	Underground Injection				On-site Releases to Land			Transferred Within State Pounds	Transferred Out of State Pounds
	Air Emissions Pounds	Surface Water Discharges Pounds	Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
Holnam Inc., Dundee Plant, Dundee, Monroe	2,752,121	0	0	0	0	0	2,752,121	0	0
Warner-Lambert Co., Parke-Davis Div., Holland, Ottawa	215,206	0	2,075,420	0	0	0	2,290,626	7,510	0
Lafarge Corp. (Including Systech Env. Corp.), Alpena, Alpena	1,545,752	216	0	0	0	431,000	1,976,968	0	15
Intertape Polymer Group, Marysville, St Clair	1,752,847	0	0	0	0	0	1,752,847	1,711	1,005
Pharmacia & Upjohn, Kalamazoo, Kalamazoo	191,451	48,471	1,325,706	0	0	0	1,565,628	34,018	12,037
Fibermark, Rochester, Oakland	1,535,771	0	0	0	0	0	1,535,771	0	0
GMPT Saginaw Metal Casting Ops., Saginaw, Saginaw	151,074	0	0	0	0	1,129,950	1,281,024	1,386	620
Vemco Inc., Grand Blanc, Genesee	1,239,333	0	0	0	0	0	1,239,333	0	0
Steelcase Inc., Grand Rapids, Kent	1,124,049	0	0	0	0	0	1,124,049	9,129	0
GM MLCG — Hamtramck Assembly, Detroit, Wayne	1,105,809	0	0	0	0	0	1,105,809	7,812	21,277

*The facility ranking is based on the amounts in this column; these quantities exclude transfers out of state.

On- and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (Seven New Industries)

Facility, City, County	On-site Releases						Total On-site Releases * Pounds	Off-site Releases (Transfers Off-site to Disposal)	
	Underground Injection				On-site Releases to Land			Transferred Within State Pounds	Transferred Out of State Pounds
	Air Emissions Pounds	Surface Water Discharges Pounds	Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
Detroit Edison Monroe Power Plant, Monroe, Monroe	8,058,508	11,622	0	0	0	4,538,272	12,608,402	57	0
Wayne Disposal Inc., Belleville, Wayne	8,760	0	0	0	8,258,900	0	8,267,660	1,082,362	15,297
J.H. Campbell Generating Plant, West Olive, Ottawa	5,912,302	17,056	0	0	0	939,770	6,869,128	0	0
De Karn — JC Weadock Generating Plt., Essexville, Bay	3,545,292	53,625	0	0	0	701,000	4,299,917	0	0
Detroit Edison St., Clair Power Plant, East China Township, St Clair	1,682,933	6,545	0	0	0	1,573,296	3,262,774	0	0
Grand Haven Board of Light & Power, Grand Haven, Ottawa	2,774,125	27	0	0	0	4	2,774,156	5	0
J.R. Whiting Generating Plant, Luna Pier, Monroe	2,086,874	573	0	0	0	151,000	2,238,447	0	0
Detroit Edison — River Rouge Power Plant, River Rouge, Wayne	1,930,681	6,948	0	0	0	92,073	2,029,702	412,447	0
Detroit Edison — Trenton Channel Power Plant, Trenton, Wayne	1,622,379	17,340	0	0	0	132,630	1,772,349	652,740	0
Detroit Edison, Belle River Power Plant, China Township, St Clair	437,590	45,940	0	0	0	1,181,299	1,664,829	0	0

*The facility ranking is based on the amounts in this column; these quantities exclude transfers out of state.



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Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (Original Industries)

Facility, City, County	Recycled On-site Pounds	Recycled Off-site Pounds	Energy Recovery On-site Pounds	Energy Recovery Off-site Pounds	Treated On-site Pounds	Treated Off-site Pounds	Quantity Released On- and Off-site* Pounds	Total Production- related Waste Managed Pounds	Total Non- Production- related Waste Managed Pounds
Rouge Steel Co., Dearborn, Wayne	0	429,350	0	0	0	0	16,076,600	16,505,950	0
Natl. Steel Corp., Greatlakes Div., Ecorse, Wayne	2,527,736	2,237	0	87	29,000	99,022	11,042,697	13,700,779	0
Holnam Inc., Dundee Plant, Dundee, Monroe	0	0	0	0	0	0	2,752,121	2,752,121	0
Warner-Lambert Co., Parke-Davis Div., Holland, Ottawa	4,805,000	498,470	0	12,185,220	1,540,550	3,758,710	2,327,871	25,115,821	290
Lafarge Corp. (Including Systech Env. Corp.), Alpena, Alpena	0	0	31,146,000	0	1,777	1,393	1,977,304	33,126,474	0
Intertape Polymer Group, Marysville, St Clair	15,390,285	0	0	0	1,464,000	27,404	1,765,455	18,647,144	0
Pharmacia & Upjohn, Kalamazoo, Kalamazoo	0	0	316,876	19,139,023	1,959,306	9,282,988	1,656,431	32,354,624	106
Fibermark, Rochester, Oakland	0	0	0	0	0	47,202	1,534,750	1,581,952	0
GMPT Saginaw Metal Casting Ops., Saginaw, Saginaw	0	72,933	0	0	610,000	90	1,282,300	1,965,323	0
Vemco Inc., Grand Blanc, Genesee	0	750,116	0	0	804,248	23,151	1,239,333	2,816,848	0

*The facility ranking is based on the amounts in this column; these quantities exclude non-production-related releases.

Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (Seven New Industries)

Facility, City, County	Recycled On-site Pounds	Recycled Off-site Pounds	Energy Recovery On-site Pounds	Energy Recovery Off-site Pounds	Treated On-site Pounds	Treated Off-site Pounds	Quantity Released On- and Off-site* Pounds	Total Production- related Waste Managed Pounds	Total Non- Production- related Waste Managed Pounds
Detroit Edison Monroe Power Plant, Monroe, Monroe	0	0	0	0	2,120,000	0	12,584,000	14,704,000	0
Wayne Disposal Inc., Belleville, Wayne	0	67	0	17	706,940	2,610	9,338,600	10,048,234	7
J.H. Campbell Generating Plant, West Olive, Ottawa	0	0	0	0	2,061,000	0	6,870,000	8,931,000	2
De Karn — JC Weadock Generating Plt., Essexville, Bay	0	0	0	0	1,064,000	0	4,294,550	5,358,550	0
Detroit Edison St., Clair Power Plant, East China Township, St Clair	0	0	0	0	1,380,000	0	3,260,200	4,640,200	0
Grand Haven Board of Light & Power, Grand Haven, Ottawa	0	0	0	0	0	0	2,755,788	2,755,788	0
Detroit Edison — River Rouge Power Plant, River Rouge, Wayne	0	0	0	0	421,000	0	2,443,000	2,864,000	0
Detroit Edison — Trenton Channel Power Plant, Trenton, Wayne	0	0	0	0	917,000	0	2,422,550	3,339,550	0
J.R. Whiting Generating Plant, Luna Pier, Monroe	0	0	0	0	228,500	0	2,238,000	2,466,500	0
Lansing Board Water & Light Eckert Station, Lansing, Ingham	0	145,300	0	0	0	0	1,692,773	1,838,073	6

*The facility ranking is based on the amounts in this column; these quantities exclude non-production-related releases.